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Non-Standard Matches and Charitable Giving

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Abstract: Many organisations, including corporations and governments, wish to encourage charitable giving, and offer incentives for their employees, customers and citizens to do so. The most common of these incentives is a match rate, where the organisation agrees to pay, for example, \$1 for every \$1 donated. However, these incentives may not be efficient. In this short article we suggest alternative ways of matching that existing theory and data suggest might be more effective at encouraging donations. These include non-linear matching, social (and team) matching, and lottery matching – each of which novel schemes could be tested empirically against a standard match incentive.

Section 1. Introduction

Given the sheer number of charitable organizations – in the United States, the number of non-profits increased some 25% between 2001 and 2011 (from 1.26 to 1.57 million) – there is considerable interest in understanding the reasons for which individuals donate money to charity, and moreover, how they might be encouraged to donate more. While increasing donation rates is of natural interest to charities and their fundraisers, it is also of academic interest to both economists and psychologists seeking to understand altruistic behaviors, and to governments, many of which seek to encourage the charitable production of public goods.

Many governments offer generous incentives to donate to charity through the tax system. In the United States, charitable contributions ranging from cash to property to services to goods are eligible to be claimed as deductions, with some constraints (cash gifts can be deducted in full only up to 50% of income, for example). In the United Kingdom, the Gift Aid system allows donors who pay tax to automatically donation gross of basic rate tax, while higher rate taxpayers can claim a rebate for the remainder; since 2010, a discount is offered on UK inheritance tax when people leave more than 10% of their estate to charity in their will.

As we will review below, philanthropists, employers, or charities themselves may also offer incentives of this form – where one person's donation is 'matched' by money from another source. In section 2, we consider the evidence supporting the use of this kind of 'match', both from our theoretical understanding of behavior and from the empirical literature on this area. In section 3, we describe novel alternatives to the standard match, such as non-linear matching, social (and team) matching schemes, and lottery matching. For each new type of non-standard match, we use existing theory and data to offer support for its potential effectiveness. We summarize in section 4 by suggesting that all of these novel schemes be tested empirically to determine their effectiveness in practice.

Section 2: Standard Matches

A “Standard Match” operates in a simple way – for every £1 a person donates from their net consumption (i.e. for each £1 sacrificed from their ability to buy other things) – their chosen cause receives more. The form that standard matches take, however, can vary. In a scheme like Gift-Aid in the United Kingdom, the donor gives £1, ticks a box, and the charity receives £1.25. Rebate schemes are slightly more complex, but the effect is the same. A donor gives \$1 to the charity, and receives a rebate of \$0.20 – the cost to the donor is only \$0.80. If the donor gives \$1.25 to the charity (so the charity receives the same as in the previous example), the donor receives a rebate of \$0.25, such that the net cost to the donor is \$1, and the charity has received \$1.25

The aim of offering match is to encourage giving. In principle, this works by the fact that the match lowers the “price” of a gift to a charity. Suppose a match of m pounds is offered for every pound donated, d . The total gift to the charity is $g=d(1+m)$. The effect of the match reduces the cost of a gift of £1 to $1/(1+m)$. By the basic law of demand, if the price of something falls, consumers should consume more.

Note, however, that it is the price of the (match-inclusive) gift that has fallen, not the price of the donation to the individual donor. By this logic, we expect total gifts to increase (the charities will gain), but individual donations may not. In fact, it is quite possible that individual donations (d) might actually decrease. Suppose that donors have certain targets for how much charities should receive (“I’d like the Red Cross to receive \$100”). Under a one-to-one standard match scheme, they may now give a lower donation in order for their total gift to achieve that target (“I only need to give \$50 for them to get \$100”). In this case, matches actually “crowd out” individual donations – the charities are better off, but the match fails at increasing individual gifts. The match has simply replaced individual donations.

What is crucial is the price elasticity of demand for gifts, or how sensitive total (match-inclusive) gifts (g) are to changes in the price. If the price elasticity of gifts is greater than one in absolute value, then matches are cost-effective – they crowd in individual donations (d). If that elasticity is less than one, however, then we would observe crowding out.

What does empirical evidence reveal about the effect of standard matches on giving? Overall, the evidence suggests that matches may not be an optimally-cost-effective way to increase giving. Charities benefit from the value of the match payments, but the match payments do not have a large positive effect on individuals' donations.

A number of empirical studies have explored how donations and total (match-inclusive) gifts respond to changes in the match. Eckel and Grossman (2003) carried out an experiment in the lab involving 181 undergraduate students who were each given twelve allocation problems: deciding how to allocate an initial endowment between themselves and a charity of their choice when faced with varying amounts of initial endowment and varying match rates. Their estimate of the price elasticity of gifts with respect to the match was -1.14: there was some increase in donations, but the effect was small. A similar experiment in the field yielded similar results: Minnesota Public Radio mailed out 370,000+ donor solicitations, offering differing match rates from 1:1 to 2:1. Based on approximately 7,000 responses, they found an estimated elasticity of (match-inclusive) gifts of -1.05 (Eckel and Grossman (2008)). In short, there was almost no change in donations in response to differing values of the match rate. Similar magnitudes have been found in experimental studies in the United States (Blumenthal, Kalambokidis and Turk, 2012; Davis, Millner and Reilly, 2005). In a United Kingdom study, Scharf and Smith (2011) used a survey approach to look at responses to (hypothetical) changes in the match element of the UK Gift Aid scheme (i.e. how much charities can claim from the government in tax relief on donations made out of net of tax donations). Their

results revealed match elasticity estimates of -1.13 – again suggesting a very small effect on donations.

Karlan, List, and Shafir (2011) sent fundraising letters to over 50,000 potential donors, one third of whom acted as a control group. Letters included either no match, a 1-to-1, 2-to-1, or 3-to-1 match, that is, $p = 1, 0.5, 0.33$ or 0.25 , respectively. The presence of *any* match had a significant impact on the likelihood of giving and increased the donation per mailing; as the match increased from 1 to 2 to 3-to-1, however, donations per mailing remained flat.

Why don't matches appear to matter very much? One possibility is that individuals care about how much they donate (d) rather than the total gift (g), or how much the charity receives. The match affects the price of a gift but has no effect on the price of a donation: the individual still must forgo the identical amount of other consumption, so donors will not respond to matches if they care primarily about donations (for example, as a means of signalling their wealth or generosity). While donors *report* caring about both how much they give and about how much the charity receives through the match (Scharf and Smith, 2009), the results reviewed above do not appear in line with these self-reports.

A slightly different take is the “isolation story” suggested by Davis et al. (2005). They argue that donors may care about the total gift amount, but because matches and other subsidies are complicated, donors in practice focus on their donation and ignore the relationship between the amount they give and the amount the charity receives. Analysis in Scharf and Smith (2009) shows that donations are more responsive to match rates when donors give larger amounts (the elasticity among people giving £20,000 a year was -1.5). This might suggest that donors pay more attention to match rates when the stakes are higher, such that matches (and other incentives) may be more effective if targeted at particular groups.

A related literature examines the relative effectiveness of using the money that would have financed the match to fund lead donations instead, such as announcing a single large donation of £100,000.

Lead donations may effect individual donations both because the presence of a lead donation signals the quality of the project, and because they increase the likelihood that the charitable endeavour will have the resources to be carried out (e.g., if there are fixed costs). The empirical evidence suggests is that announcing lead donations is typically more effective than matches.

Huck and Rasul (2011) tested the effect of a lead donation compared to a match by means of a fund drive run by the Bavarian State Opera House. A control group did not receive any mention of a lead giver or a match; treatment groups were told about a lead donation *or* different levels of match. Not only did announcing the lead gift have the biggest effect on donations, but the matching scheme actually caused out-of-pocket donations to decrease.

One final issue arises with standard matches. A one-off match may affect the timing of donations – individuals who planned to donate at some point instead donate sooner to take advantage of the match. This tendency would cause matches to appear more effective in increasing total individual donations than they are in practice. Indeed, Meier (2010) shows that giving *decreases* when matches are withdrawn, providing further evidence that matches may not be the most effective way to increase giving to charities.

Section 3. Non-Standard Matches

We now consider potential options for non-standard matches.

3.1 Non-linear and discontinuous matches

One alternative to a standard match might be to introduce the match only above a certain level of donation, creating a discontinuity in the ‘price’ of donation. Depending on where the discontinuity is set (and how large the match), this scheme may be used to induce a higher level of donations, similar to the way in which overtime payments motivate employees to work more hours. In a standard 1:1 matching scheme, a donor who planned to give \$30 may be tempted to give only \$15 – since the charity will still receive \$30. A donor who planned to give \$30 under a scheme where the match moves from 1:1 to 2:1 at donations of \$30 and above may be less likely to decrease donation level. Similarly, discontinuous matches – where say, any matching at all only kicks in after a certain threshold – may help to decrease crowding out. The donor who planned to give \$30 may be tempted to give only \$15 under a standard 1:1 match; if that match only kicks in for donations of \$30 and above, the donor may be more likely to continue to give \$30.

A discontinuity in the price of giving could also have other, more behavioral effects. In particular, the threshold for receiving the match could act as an anchoring point, or signal the ‘correct’ level of donation. Vesterlund (2003) presents a theoretical model in which players who are unaware of the charity’s quality move in sequence. In this model, the player who moves first engages in a costly search to determine the charity’s quality. When the first (informed) player moves, their donation acts as a signal of the quality to subsequent players. Potters et al. (2005) test a similar hypothesis experimentally, finding that informed agents are endogenously chosen to move first, and that subsequent players coordinate on their donations. In our example, we might conceive of an employer engaging in the costly information search, with the “cut off point” for the change in the match rate serving as the signal.

Finally, setting matches at particular donation amounts may additionally serve to institute reference points for giving, anchoring donors on that target as they make their own decisions. Indeed, a large body of research suggests that such numerical anchors – even when quite arbitrary – can influence

monetary decision making (Ariely, Loewenstein, and Prelec, 2003; Tversky and Kahneman, 1974). Faced with a charitable solicitation, donors interested in that charity may still be uncertain about the appropriate donation amount; suggesting that matches kick in at \$30 may serve as an anchor for the amount that donor chooses to give.

3.2 Social Matching

The above non-standard matches occur at the level of the individual donor, such as when receiving a solicitation in the mail. In many cases, however, charitable solicitations occur in group settings, as when organizations encourage their employees to give with matches. Below, we suggest several non-standard matches that capitalize on the social pressures and triggers present in such group giving contexts.

3.2.1 Social adoption matches.

As in other schemes, employees are incentivized to all engage in charitable behavior via matching funds from their employer. Under traditional workplace matching schemes, the match amount remains constant regardless of the number of employees who donate. With *social adoption incentives*, in contrast, the match amount increases as the percent of employees who donate increase. In short, the more employees who donate, the higher the match amount for all employees. Incentives are based on group performance – and incentives rise as more people hit the target: if 10% of employees donate, the company matches 1:1, when 20% donate, the company matches 2:1, and so on. Importantly, social adoption incentives can be “kinked” in any manner deemed most effective. For example, rather than the match increasing linearly, it can increase exponentially (when 20% donate, the company matches 2.5:1, and so on).

One of the key barriers to encouraging any novel behavior – charitable or otherwise – is to encourage laggards (those not generally interested in performing the behavior) to comply. Social

adoption incentives address this problem in two ways. First, by increasing the payoffs as adoption increases, those with lower intrinsic utility to comply (laggards) may have their reluctance overcome with increased extrinsic incentives. Second, by incentivizing early adopters to push non-adopters to contribute – by increasing the value of early adopters’ contributions with each late adopter who contributes – these incentives encourage further recruitment efforts by early contributors.

These incentives could be instituted at the firm or plant level, or more locally, within small teams. By reducing the social distance between those encouraging donations and those being encouraged in this way, encouragement is likely to be made more powerful. By using the team as the unit of incentive, further innovations may be possible. For example, incentives such as matches could only kick in if 50% of the staff in the *team* are donating. While in the wider workforce the contribution of any individual to this 50% may be insubstantial, reducing their incentive to donate, in a smaller team their contribution can be far greater. With this kind of ‘threshold’ for provision, a greater proportion of seed money has been found by List and Lucking Reiley (2002) to crowd donations *in* rather than out.

3.2.2 Competitive matches.

While the above schemes treat organizations as a whole – all employees benefit when other employees benefit – large organizations are often segmented into different teams and work groups. In such cases, the opportunity arises for teams to “compete” for charitable contributions against each other. Imagine a simplified organization that wishes to increase employee donations and that consists of just two sales teams. In a standard matching scheme, any contribution from members of either team would be matched at the same rate (for example, 1:1). Under competitive matches, teams that donate the most money – and/or have the largest percentage of team members donating –

“win” a larger match percentage from the company; the losing team stays at 1:1, the winning team moves to 2:1.

Such competitive matches can also be used to induce not only more giving behavior, but also to motivate performance. To take the sales team example above, rather than the higher match rate kicking in for the team that *gives* the most, the higher rate could kick in for the team that *sells* the most over the course of some time period. In this case, the firm may benefit in terms of both increased revenues and higher rates of corporate giving.

3.2.3 Lottery matches.

Finally, organizational contexts offer yet another means by which another kind of competitive instinct – the desire to win a lottery at the expense of one’s co-workers – can cause social factors to increase giving. Firms that offer matches on charitable donations often have a ‘cap’ on that funding, such that the marginal donor in companies with successful schemes may at times receive less than a 1:1 match, or even no match at all. With charitable budgets being reduced during times of recession and economic slowdown, this is increasingly likely to be the case. With a *match lottery*, the funds available for the match remain the same. However, every £1 donated through payroll giving is also a “lottery ticket,” and is entered into a draw at the end of the month for that month’s available pot - whichever ticket is drawn, that charity receives the whole pot for that month.

A large body of research suggests that people tend to overweight small probabilities (Kahneman and Tversky, 1974), explaining in part people’s fondness for entering lotteries. Building on this research, Sanders (2013) demonstrated that a small probability of a (relatively) small gain – in this case the chance to win a day off of work – can be a strong motivator in inducing workplace donations. Compared to fundraising campaigns conducted in 2010 and 2011, a 2012 campaign which offered all employees who were members of the payroll giving scheme at the end of a certain

time period the chance to win a day off, the intervention was hugely successful at recruiting new donors.

Section 4. Summary

In this brief article, we have reviewed evidence suggesting that matching schemes – an increasingly common strategy used by non-profits and firms to increase giving – may not always prove effective in that goal. We then offered several novel matching schemes which attempt to improve the effectiveness of matching, some of which focused on individual donors in isolation (non-linear and discontinuous) and some which focused on donors embedded in organizations (social adoption incentives, team matching, and match lotteries). Our hope is to spur further research assessing the efficacy of these schemes – reducing the tendency for matching schemes to crowd out donations and making them more likely to increase charitable behavior.

References

- Ariely, D., Loewenstein, G., Prelec, D. (2003): “Coherent arbitrariness: stable demand curves without stable preferences.” *Quarterly Journal of Economics* Vol.118, pp73–105.
- Blumenthal, M, Kalambokidis, L & Turk, A (2013): “Subsidizing charitable contributions with a match instead of a deduction: What happens to donations and compliance” *National Tax Journal* Vol.65(1) pp91-116.
- Davis, D, Millner, E & Reilly, R (2005): “Subsidy Schemes and Charitable Contributions: A Closer Look” *Experimental Economics* Vol.8(2) pp105-106.
- Eckel, C & Grossman, P (2003): “Rebate versus matching: does how we subsidize charitable contributions matter?” *Journal of Public Economics* vol.87(3-4) pp681-701.
- Eckel, C & Grossman, P (2008): “Subsidizing charitable contributions: a natural field experiment comparing matching and debate subsidies” *Experimental Economics* Vol.11(3) pp234-252.
- Grant, A.M. 2008. Designing jobs to do good: Dimensions and psychological consequences of prosocial job characteristics. *Journal of Positive Psychology*. 3(1) 19-39.
- Huck, S & Rasul, I (2011): “Matched Fundraising, Evidence from a natural field experiment” *Journal of Public Economics* Vol 95 (5-6) pp351-362.
- Karlan, D, List, J & Shafir, E (2011): “Small matches and charitable giving: evidence from a natural field experiment” *Journal of Public Economics* Vol 95(5-6) pp344-350.
- List, J and Lucking-Reiley, D (2002): “Charitable giving: Experimental Evidence from a University Capital Campaign” *Journal of Political Economy* Vol. 110(1) pp215-233.
- Meier, S (2007): “Do subsidies increase charitable giving in the long run? Matching donations in a field experiment” *Journal of European Economic Association* Vol.5(6) pp1203-1222.
- Potters, J, Sefton, M & Vesterlund, L (2005): “After you – endogenous sequencing in voluntary contribution games” *Journal of Public Economics* Vol.89(8) pp1399-1419.
- Sanders, M (2013): “What a difference a day makes: the effect of lottery incentives on signups for charitable giving” mimeo, *available on request*.

Scharf, K & Smith, S (2009): "Gift Aid Donor Research: Exploration options for reforming higher-rate relief" *Report for Her Majesty's Treasury and Her Majesty's Revenue and Customs*.

Scharf, K & Smith, S (2011): "Rational inattention to subsidies for charitable contributions" *CMPO Working Paper*, 11/269.

Roeger, K, Blackwood, A & Pettijohn, S (2012): "The Nonprofit Almanac" *Urban Institute Press*

Tversky, A. & Kahneman, D. (1974). "Judgment under uncertainty: Heuristics and biases". *Science*, Vol.185, pp1124–1130.

Vesterlund, L (2003): "The information value of sequential fundraising" *Journal of Public Economics* Vol.87(3) pp627-657.